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10/737,281	12/16/2003	Gaohong Wei	VRT0112US	6590
66429 7590 04/15/2008 CAMPBELL STEPHENSON LLP 11401 CENTURY OAKS TERRACE BLDG. H, SUITE 250 AUSTIN, TX 78758				
EXAMINER				
PHAM, MICHAEL				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/737,281

Applicant(s)

WEI ET AL.

Examiner

MICHAEL D. PHAM

Art Unit

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Detailed Action

Status of claims

1. Claims 1-32 are pending.
2. Claims 1-32 have been examined.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.
4. For the purposes of examination the phrase “machine-readable storage medium” is interpreted as a medium not including any form of energy or signals.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 13-22 and 28-32 are rejected under 35 U.S.C. 101 because the language of the claims raise a question as to whether the claims are directed merely to an abstract idea that is not tied to a machine which would result in a practical application to produce a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

- a. Claims 13 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

MPEP 2106.01:

The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material.” Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)

Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because “[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.”).

Claim 13 recites “an apparatus”. However claim 13 fails to contain any computer hardware that is used to implement the apparatus so as to realize the functionality. Contrary to arguments made by some applicants, use of the word “apparatus” does not inherently means that the claim is directed to a machine. Only if at least one of the claimed elements of the apparatus is a physical part of a device can the system as claimed constitute part of a device or a combination of devices to be a machine within the meaning of 101. Furthermore, Applicant’s specification paragraph 0049, states that each block diagram component, flowchart step, operation and/or component illustrated by use of examples can be implemented, individually and/or collectively, by a wide range of hardware, software, firmware, or any combination thereof. Thus the body of claim 13 is merely an abstract idea and is being processed without

any computer manipulation. Claims 14-22 fail to resolve the deficiencies of claim 13 and are therefore rejected.

b. Claims 28 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

MPEP 2106.01:

The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material *per se*.

Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material.” Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)

Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See *Diehr*, 450 U.S. at 185-86, 209 USPQ at 8 (noting that the claims for an algorithm in *Benson* were unpatentable as abstract ideas because “[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.”).

Claim 28 recites “a system”. However claim 15 fails to contain any computer hardware that is used to implement the system so as to realize the functionality. Contrary to arguments made by some applicants, use of the word “system” does not inherently means that the claim is directed to a machine. Only if at least one of the claimed elements of the system is a physical part of a device can the system as claimed constitute part of a device or a combination of devices to be a machine within the meaning of 101. Furthermore, Applicant’s specification paragraph

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0049, states that each block diagram component, flowchart step, operation and/or component illustrated by use of examples can be implemented, individually and/or collectively, by a wide range of hardware, software, firmware, or any combination thereof. Thus the body of claim 28 is merely an abstract idea and is being processed without any computer manipulation. Claims 29-32 fail to resolve the deficiencies of claim 28 and are therefore rejected.

Claim Rejections - 35 USC § 112

7. Prior rejection under 35 U.S.C. 112 second paragraph is respectfully withdrawn.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 7133884 by Murley et. al. (hereafter Murley) further in view of U.S. Patent Application Publication 20050021487 by Verma et. al. (hereafter Verma).

Claim 1:

Murley discloses the following claimed limitations:

“Discovering a plurality of components, wherein a database comprises the plurality of components and wherein the database is stored on a storage volume;” [col. 2 lines 52-53 discloses identifies one or more source database objects in a database. Col. 4 line 2 discloses targeted database objects as they exist on the storage device or system. Col. 1 lines 15-18 discloses a database is, fundamentally, a computerized record keeping system in which large amounts of information maybe stored in a structured manner for ease of subsequent retrieval and processing. Col. 1 lines 20-22, discloses a dbms, in turn provides four primary functions: management of physical storage. Accordingly, discovering (col. 2 lines 52-53 identifies) a plurality of components (col. 2 lines 52-53 one or more database objects), wherein a database (col. 2 lines 52-53, a database) comprises the plurality of components (col. 2 lines 52-53, database objects in a database) and wherein the database is stored (col. 1 lines 15-18, stored) on a storage volume (col. 1 lines 20-22, physical storage) is suggested.]

“Selecting a component of said plurality of components;” [col. 2 lines 54-55, discloses obtains a copy of identified one or more source database objects. Accordingly, selecting (obtains a copy of identified) a component of said plurality of components (one or more source database objects) is suggested.]

“generating a point-in-time image of said component” [col. 4 lines 1-2, generate a point-in-time image of the targeted database objects as they exist on the storage device.]

Murley does not explicitly disclose

“Selecting a data management resource of a plurality of data management resources using an attribute of said component; and”

“Generating a point-n-time image of said component using said data management resource” alone.

On the other hand, Verma, discloses

“selecting a data management resource of a plurality of data management resources using an attribute of said component” [Abstract, each resource manager (data management resources) independently maintains metadata (attribute) associated with a collection of files (component) that are contained within the scope of a resource manager, such as the files within a subdirectory corresponding to the resource manager. [0036], when a file is accessed in a transacted file system, the file system needs to know exactly which resource manager is responsible for maintaining the transactional metadata for that file. Further disclosing, files may be associated in other ways, such as by having the same file extension, having timestamps within a common time frame, by sizes, and may even have tags stored within that identifies a resource manager through some other means. 0009, users can select properties on a per-resource manager basis such as the size of the log file and/or the type of logging to be performed, to obtain different levels of performance, reliability, feature availability, and manageability within a single volume. Accordingly, selecting a data management resource (0036, which resource manager) of a plurality of data management resources (abstract, each resource manager) using attribute of said

component (0009, users can select properties on a per-resource manager basis, such as the size of the log file) is suggested.].

“Generating a point-n-time image of said component using said data management resource” [[0035]. The resource manager typically provides transactional services and functionality, e.g. exposed through APIs. Further disclosing, 0035, the resource manager is thus the unit of management for various resources that do not exist in non-transacted file systems as well as for some resources (e.g. log files) that do. [0011], to facilitate use of a resource manager, application programming interfaces may be provided, including functions to create, start, and shut down a resource manager. Other functions may be defined such as to back up and restore files associated with a resource manager, and employ point-in-time recovery of a particular state in time of a resource manager. Accordingly, generating a point-in-time image (0011, employ point-in-time recover of a particular state in time of a resource manager) of said component (0011, back up and restore files associated with a resource manager) using said data management resource (0011, resource manager) is suggested.]

Murley, Verma, and Applicant's invention all are directed to recovery systems using point-in-time images of databases. Accordingly, Murley and Verma are within the same field of endeavor. It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have applied the disclosure resource managers of Murley above, to the disclosure of Verma for the purpose of providing different properties to match different needs of various users, databases, and other entities.

Claim 2:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“determining a speculative structure of said database;” [col. 7 lines 19-22, current snapshot]

“identifying each of said plurality of components using said speculative structure; and” [col. 7 lines 19-22 selectively removing updates back to the user-specified point in time.]

“performing one or more operations to determine if said speculative structure of said database is equivalent to an actual structure of said database” [col. 7 lines 19-22, a consistent copy is created by starting with a current snapshot of the target database (or portions thereof) and selectively removing updates back to the user-specified point-in-time.]

Claim 3:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Selecting said component of said plurality of components to include within a point-in-time images of said database” [col. 2 lines 60-64, creates a snapshot of the one or more source database objects at a time after the point-in-time and in a manner that does not substantially block access to the source database objects in the database, and makes the snapshot consistent as of the point-in-time.]

Claim 4:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Selecting at least one of a database directory, a table space container, and a redo log directory.” [col. 4 lines 53-58, if the log entry has not been applied, the update is externalized to the image copy. If the log entry has been applied, the current log entry is skipped and the next log entry is evaluated.]

Claim 5:

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Selecting said data management resource using said attribute of said component and a user-defined policy.” [0009, users can select properties (user-defined policy) on a per-resource manager basis, such as the size of the log file (attribute of said component).]

Claim 6:

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Selecting said data management resource using at least one of a size attribute, a type attribute, a structure attribute, and a location attribute. “[0009, users can select properties on a per-resource manager basis, such as the size of the log file.]

Claim 7:

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Defining a component size range; and” [0009, users can select properties on a per-resource manager basis, such as the size of the log file]

“Selecting said data management resource in response to a determination that said size attribute is within said component size range.” [0009, users can select properties on a per-resource manager basis, such as the size of the log file]

Claim 8:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Selecting a point-in-time image creation process” [0011, point-in-time recovery]

Claim 9:

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“wherein said point-in-time image creation process comprises at least one of: a file-level point-in-time image creation process, a directory-level point-in-time image creation process, a file system-level point-in-time image creation process, a storage device-level point-in-time image creation process, a volume-level point-in-time image creation process, and a volume group-level point-in-time image creation process” [0011, back up and restore the files].

Claim 10:

The combination of Murley and Verma discloses in Murley discloses the following claimed limitations:

“Selecting at least one of: a snapshot creation process, a storage checkpoint creation process, and a file copy command, and a backup utility process” [col. 2 lines 60, creates a snapshot]

Claim 11:

The combination of Murley and Verma discloses in Murley discloses the following claimed limitations:

“Restoring said database using said point-in-time image of said component.” [col. 2 lines 44-51, recover database objects]

Claim 12:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Said database is initially stored within a first storage region” [col. 5 line 13, original or source database]

“Said restoring comprises,

Restoring said database to a second storage region”[col. 5 lines 17-20, can both generate a copy of a database that is consistent at a specified arbitrary time, or it can recover and replace a database with a consistent point-in-time copy of itself]

Claim 13:

Murley discloses the following claimed limitations:

“Means for discovering a plurality of components, wherein a database comprises the plurality of components, and wherein the database is stored on a storage volume;” [col. 2 lines 52-53 discloses identifies one or more source database objects in a database. Col. 4 line 2 discloses targeted database objects as they exist on the storage device or system. Col. 1 lines 15-18 discloses a database is, fundamentally, a computerized record keeping system in which large amounts of information maybe stored in a structured manner for ease of subsequent retrieval and processing. Col. 1 lines 20-22, discloses a dbms, in turn provides four primary functions: management of physical storage. Accordingly, means for discovering (col. 2 lines 52-53 identifies) a plurality of components (col. 2 lines 52-53 one or more database objects), wherein a database (col. 2 lines 52-53, a database) comprises the plurality of components (col. 2 lines 52-53, database objects in a database) and wherein the database is stored (col. 1 lines 15-18, stored) on a storage volume (col. 1 lines 20-22, physical storage) is suggested.]

However, Murley does not explicitly disclose

“means for associating a data management resource with a component of said plurality of components; and”

“means for generating a point-in-time image of said component using said data management resource”

On the other hand, Verma, discloses

“Means for associating a data management resource with a component of said plurality of components; and” [Abstract, each resource manager (data management resources) independently maintains metadata associated (associated) with a collection of files (component) that are contained within the scope of a resource manager, such as the files within a subdirectory corresponding to the resource manager. [0036], when a file is accessed in a transacted file system, the file system needs to know exactly which resource manager is responsible for maintaining the transactional metadata for that file. Further disclosing, files may be associated in other ways, such as by having the same file extension, having timestamps within a common time frame, by sizes, and may even have tags stored within that identifies a resource manager through some other means. 0009, users can select properties on a per-resource manager basis such as the size of the log file and/or the type of logging to be performed, to obtain different levels of performance, reliability, feature availability, and manageability within a single volume. Accordingly, means for associating a data management resource with a component of said

plurality of components (0009, users can select properties on a per-resource manager basis, such as the size of the log file) is suggested.].

“means for generating a point-n-time image of said component using said data management resource” [[0035]. The resource manager typically provides transactional services and functionality, e.g. exposed through APIs. Further disclosing, 0035, the resource manager is thus the unit of management for various resources that do not exist in non-transacted file systems as well as for some resources (e.g. log files) that do. [0011], to facilitate use of a resource manager, application programming interfaces may be provided, including functions to create, start, and shut down a resource manager. Other functions may be defined such as to back up and restore files associated with a resource manager, and employ point-in-time recovery of a particular state in time of a resource manager. Accordingly, means for generating a point-in-time image (0011, employ point-in-time recover of a particular state in time of a resource manager) of said component (0011, back up and restore files associated with a resource manager) using said data management resource (0011, resource manager) is suggested.]

Murley, Verma, and Applicant's invention all are directed to recovery systems using point-in-time images of databases. Accordingly, Murley and Verma are within the same field of endeavor. It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have applied the disclosure resource managers of Murley above, to the disclosure of Verma for the purpose of providing different properties to match different needs of various users, databases, and other entities.

Claim 14:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Means for determining a speculative structure of said database;” [col. 7 lines 19-22, current snapshot]

“Means for identifying each of said plurality of components using said speculative structure; and” [col. 7 lines 19-22 selectively removing updates back to the user-specified point in time.]

“performing one or more operations to determine if said speculative structure of said database is equivalent to an actual structure of said database” [col. 7 lines 19-22, a consistent copy is created by starting with a current snapshot of the target database (or portions thereof) and selectively removing updates back to the user-specified point-in-time.]

Claim 15:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Means for associating a point-in-time image creation process with said component of said plurality of components” [figure 1, element 110, snapshot designated objects].

Claim 16:

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Means for associating said data management resource with said component of said plurality of components using an attribute of said component” [Abstract, each resource manager (data management resources) independently maintains metadata (attribute of said component) associated (associated) with a collection of files (component) that are contained within the scope of a resource manager, such as the files within a subdirectory corresponding to the resource manager.]

Claim 17:

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Means for associating said data management resource with said component of said plurality of components using a user-defined policy” [0009, users can select properties (user-defined policy) on a per-resource manager (data management resource) basis, such as the size of (attribute of) the log file (said components of said plurality of components).]

Claim 18:

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Means for associating said data management resource with said component of said plurality of components using at least one of a size attribute, a type attribute, a structure attribute, and a location attribute” [0009, users can select properties on a per-resource manager basis, such as the size of the log file]

Claim 19:

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Means for defining a component size range; and” [0009, users can select properties on a per-resource manager basis, such as the size of the log file]

“Means for associating said data management resource with said component in response to a determination that said size attribute is within said component size range” [0009, users can select properties on a per-resource manager basis, such as the size of the log file]

Claim 20:

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Means for generating a point-in-time image of said database” [col. 2 lines 46-48].

Claim 21:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Means for restoring said database using said point-in-time image of said component”
[col. 2 lines 44-51, recover database objects]

Claim 22:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Said database is initially stored within a first storage region, and” [col. 5 line 13, original or source database]

“Said means for restoring comprises,

Means for restoring said database to a second storage region” [col. 5 lines 17-20, can both generate a copy of a database that is consistent at a specified arbitrary time, or it can recover and replace a database with a consistent point-in-time copy of itself].

Claim 23:

Murley discloses the following claimed limitations:

“A machine-readable storage medium having a plurality of instructions executable by a machine embodied therein, wherein said plurality of instructions when executed cause said machine to:

Discover a plurality of components, wherein a database comprises the plurality of components and wherein the database is stored on a storage volume;” [col. 2 lines 52-53 discloses identifies one or more source database objects in a database. Col. 4 line 2 discloses targeted database objects as they exist on the storage device or system. Col. 1 lines 15-18 discloses a database is, fundamentally, a computerized record keeping system in which large amounts of information maybe stored in a structured manner for ease of subsequent retrieval and processing. Col. 1 lines 20-22, discloses a dbms, in turn provides four primary functions: management of physical storage. Accordingly, discovering (col. 2 lines 52-53 identifies) a plurality of components (col. 2 lines 52-53 one or more database objects), wherein a database (col. 2 lines 52-53, a database) comprises the plurality of components (col. 2 lines 52-53, database objects in a database) and wherein the database is stored (col. 1 lines 15-18, stored) on a storage volume (col. 1 lines 20-22, physical storage) is suggested.]

“Select a component of said plurality of components;” [col. 2 lines 54-55, discloses obtains a copy of identified one or more source database objects. Accordingly, selecting (obtains

a copy of identified) a component of said plurality of components (one or more source database objects) is suggested.]

“generating a point-in-time image of said component” [col. 4 lines 1-2, generate a point-in-time image of the targeted database objects as they exist on the storage device.]

Murley does not explicitly disclose

“Select a data management resource of a plurality of data management resources using an attribute of said component; and”

“Generate a point-n-time image of said component using said data management resource” alone.

On the other hand, Verma, discloses

“select a data management resource of a plurality of data management resources using an attribute of said component” [Abstract, each resource manager (data management resources) independently maintains metadata (attribute) associated with a collection of files (component) that are contained within the scope of a resource manager, such as the files within a subdirectory corresponding to the resource manager. [0036], when a file is accessed in a transacted file system, the file system needs to know exactly which resource manager is responsible for maintaining the transactional metadata for that file. Further disclosing, files may be associated in other ways, such as by having the same file extension, having timestamps within a common time

frame, by sizes, and may even have tags stored within that identifies a resource manager through some other means. 0009, users can select properties on a per-resource manager basis such as the size of the log file and/or the type of logging to be performed, to obtain different levels of performance, reliability, feature availability, and manageability within a single volume. Accordingly, selecting a data management resource (0036, which resource manager) of a plurality of data management resources (abstract, each resource manager) using attribute of said component (0009, users can select properties on a per-resource manager basis, such as the size of the log file) is suggested.].

“Generate a point-n-time image of said component using said data management resource”
[[0035], The resource manager typically provides transactional services and functionality, e.g. exposed through APIs. Further disclosing, 0035, the resource manager is thus the unit of management for various resources that do not exist in non-transacted file systems as well as for some resources (e.g. log files) that do. [0011], to facilitate use of a resource manager, application programming interfaces may be provided, including functions to create, start, and shut down a resource manager. Other functions may be defined such as to back up and restore files associated with a resource manager, and employ point-in-time recovery of a particular state in time of a resource manager. Accordingly, generating a point-in-time image (0011, employ point-in-time recover of a particular state in time of a resource manager) of said component (0011, back up and restore files associated with a resource manager) using said data management resource (0011, resource manager) is suggested.]

Murley, Verma, and Applicant's invention all are directed to recovery systems using point-in-time images of databases. Accordingly, Murley and Verma are within the same field of endeavor. It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have applied the disclosure resource managers of Murley above, to the disclosure of Verma for the purpose of providing different properties to match different needs of various users, databases, and other entities.

Claim 24:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“determining a speculative structure of said database;” [col. 7 lines 19-22, current snapshot]

“identifying each of said plurality of components using said speculative structure; and” [col. 7 lines 19-22 selectively removing updates back to the user-specified point in time.]

“performing one or more operations to determine if said speculative structure of said database is equivalent to an actual structure of said database” [col. 7 lines 19-22, a consistent copy is created by starting with a current snapshot of the target database (or portions thereof) and selectively removing updates back to the user-specified point-in-time.]

Claim 25:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Selecting said component of said plurality of components to include within a point-in-time images of said database” [col. 2 lines 60-64, creates a snapshot of the one or more source database objects at a time after the point-in-time and in a manner that does not substantially block access to the source database objects in the database, and makes the snapshot consistent as of the point-in-time.]

Claim 26:

The combination of Murley and Verma discloses in Verma the following claimed limitations:

“Selecting said data management resource using said attribute of said component and a user-defined policy.” [0009, users can select properties (user-defined policy) on a per-resource manager basis, such as the size of the log file (attribute of said component).]

Claim 27:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“Selecting a point-in-time image creation process” [0011, point-in-time recovery]

Claim 28:

Murley discloses the following claimed limitations:

“A first storage element to store a database; and” [original or source database]

“A point-in-time image utility configured to,

Access said first storage element;” [col. 2 lines 51-52, identifies one or more source database objects]

“Discover a plurality of components, wherein a database comprises the plurality of components;” [col. 2 lines 52-53 discloses identifies one or more source database objects in a

database. Col. 4 line 2 discloses targeted database objects as they exist on the storage device or system. Col. 1 lines 15-18 discloses a database is, fundamentally, a computerized record keeping system in which large amounts of information maybe stored in a structured manner for ease of subsequent retrieval and processing. Col. 1 lines 20-22, discloses a dbms, in turn provides four primary functions: management of physical storage. Accordingly, discovering (col. 2 lines 52-53 identifies) a plurality of components (col. 2 lines 52-53 one or more database objects), wherein a database (col. 2 lines 52-53, a database) comprises the plurality of components (col. 2 lines 52-53, database objects in a database) is suggested.]

“Select a component of said plurality of components;” [col. 2 lines 54-55, discloses obtains a copy of identified one or more source database objects. Accordingly, selecting (obtains a copy of identified) a component of said plurality of components (one or more source database objects) is suggested.]

“generating a point-in-time image of said component” [col. 4 lines 1-2, generate a point-in-time image of the targeted database objects as they exist on the storage device.]

Murley does not explicitly disclose

“Select a data management resource of a plurality of data management resources using an attribute of said component; and”

“Generate a point-n-time image of said component using said data management resource” alone.

On the other hand, Verma, discloses

“select a data management resource of a plurality of data management resources using an attribute of said component” [Abstract, each resource manager (data management resources) independently maintains metadata (attribute) associated with a collection of files (component) that are contained within the scope of a resource manager, such as the files within a subdirectory corresponding to the resource manager. [0036], when a file is accessed in a transacted file system, the file system needs to know exactly which resource manager is responsible for maintaining the transactional metadata for that file. Further disclosing, files may be associated in other ways, such as by having the same file extension, having timestamps within a common time frame, by sizes, and may even have tags stored within that identifies a resource manager through some other means. 0009, users can select properties on a per-resource manager basis such as the size of the log file and/or the type of logging to be performed, to obtain different levels of performance, reliability, feature availability, and manageability within a single volume. Accordingly, selecting a data management resource (0036, which resource manager) of a plurality of data management resources (abstract, each resource manager) using attribute of said component (0009, users can select properties on a per-resource manager basis, such as the size of the log file) is suggested.].

“Generate a point-n-time image of said component using said data management resource”
[[0035], The resource manager typically provides transactional services and functionality, e.g. exposed through APIs. Further disclosing, 0035, the resource manager is thus the unit of

management for various resources that do not exist in non-transacted file systems as well as for some resources (e.g. log files) that do. [0011], to facilitate use of a resource manager, application programming interfaces may be provided, including functions to create, start, and shut down a resource manager. Other functions may be defined such as to back up and restore files associated with a resource manager, and employ point-in-time recovery of a particular state in time of a resource manager. Accordingly, generating a point-in-time image (0011, employ point-in-time recover of a particular state in time of a resource manager) of said component (0011, back up and restore files associated with a resource manager) using said data management resource (0011, resource manager) is suggested.]

Murley, Verma, and Applicant's invention all are directed to recovery systems using point-in-time images of databases. Accordingly, Murley and Verma are within the same field of endeavor. It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to have applied the disclosure resource managers of Murley above, to the disclosure of Verma for the purpose of providing different properties to match different needs of various users, databases, and other entities.

Claim 29:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“A memory to execute said point-in-time image utility; and” [col. 7 lines 50-55, memory]

“A processor coupled to said memory to execute said point-in-time image utility.” [col. 7 lines 55-58, processor]

Claim 30:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“wherein said first node comprises said first storage element and said point-in-time image utility.” [col. 5 line 13, original or source database]

Claim 31:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“a second node communicatively coupled to said first node, wherein said second node comprises a second storage element to store said point-in-time image of said component.” [col. 5 lines 17-20, can both generate a copy of a database that is consistent at a specified arbitrary time, or it can recover and replace a database with a consistent point-in-time copy of itself]

Claim 32:

The combination of Murley and Verma discloses in Murley the following claimed limitations:

“determining a speculative structure of said database;” [col. 7 lines 19-22, current snapshot]

“identify each of said plurality of components using said structure; and” [col. 7 lines 19-22 selectively removing updates back to the user-specified point in time.]

“perform one or more operations to determine if said speculative structure of said database is equivalent to an actual structure of said database” [col. 7 lines 19-22, a consistent

copy is created by starting with a current snapshot of the target database (or portions thereof) and selectively removing updates back to the user-specified point-in-time.]

Response to Arguments

10. Applicant's arguments filed 1/25/08 have been fully considered but they are not persuasive.

Applicant's assert the following (lettered):

A. Applicant's assert that "generating a point-in-time image of said component using said data management resource" is not disclosed in the remarks on page 10. It appears that Applicant's mainly assert that the reason being is that the resource managers of the Verma reference are not components of a database (as recited in claim 1) but a unit of storage management where each database has its files independently associated with a transactional resource manager such that database operations do not affect other operations on the volume.

In response, the examiner respectfully disagrees that the combination of Murley and Verma do not disclose "generating a point-in-time image of said component using said data management resource".

In regards to, Remarks page 10 line 18-21, directed to a point in time recovery of a particular state in time of the resource manager does not disclose "generating a point-in-time

image of a component". It is respectfully disagreed. As stated in 0011, other functions may be defined, such as to back up and restore the files associated with a resource manager, and employ point-in-time-recovery of a particular state in time of a resource manager. Abstract, line 10-11, each database has its files independently associated with a transactional resource manager. 0036 line 19-20, a resource manager is defined by the collection of files for which it is responsible. 0061 lines 5-7, state that operations such as backup and restore, snapshots, point-in-time recovery and so forth may be performed at the resource manager level. In other words, operations such as the point-in-time recovery is for the files associated with the resource manager. Accordingly, generating a point-in-time image (0011 and 0061, point-in-time recovery) of said components (0011 and abstract lines 10-11, files) using said data management resource (0011 and 0061, resource manager) is suggested.

In regards to Remarks, page 10 lines 14-16 if examiner is mapping source database components to a plurality of components recovering a state of the resource manager is irrelevant. In response, it is respectfully disagreed that the resource manager is irrelevant for the reasons stated in the above response, and rejection of claim 1.

Moreover, a resource manager in and of itself can be considered a database component. As further indicated by 0036 line 19-20, a resource manager is defined by the collection of files for which it is responsible. Accordingly, a resource manager can be construed to be a database component, as a database component may be considered as anything about a database. Therefore, in this regard, remarks page 10 line 26 the statements pertaining to "resource managers are not components of a database" are not persuasive.

Lastly, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, applicant's assert that components are not disclosed in Verma when it was shown that Murley disclosed the plurality of components for the first limitation of claim 1.

Applicant's assert similar arguments as that of claim 1 in regards to similar claims 13, 23, and 28.

Conclusion

11. The prior art made of record listed on PTO-892 and not relied, if any, upon is considered pertinent to applicant's disclosure.

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael D. Pham whose telephone number is (571)272-3924. The examiner can normally be reached on Monday - Friday 9am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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